CLAIMS

1. A method of inspecting a plurality of optical modules each having an optical fiber, for at least one of optical characteristics and electrical characteristics, comprising:

a first step of detachably fitting the plurality of optical modules to a plurality of fitting blocks of a single inspection board, each of the fitting blocks having a specific channel-number corresponding to a fitting position on the single inspection board ;

a second step of setting the inspection board on a first inspection apparatus; and

a third step of measuring at least one of the optical characteristics and electrical characteristics of each of the plurality of optical modules by means of the first inspection apparatus in a state that the optical modules are fitted to the inspection board, and storing the obtained measurement data in one of storage areas allocated to the specific channel number.

2. The method of inspecting a plurality of optical modules according to claim 1, further comprising

a fourth step of removing the inspection board from the first inspection apparatus,

a fifth step of setting the inspection board on a second inspection apparatus without detaching the optical modules from the inspection board, and

a sixth step of measuring at least one of the optical characteristics and electrical characteristics of each of the optical modules fitted to the inspection board by means of the second inspection apparatus, and storing the obtained measurement data in one of storage areas allocated to the specific channel number.

3. The method of inspecting a plurality of optical modules according to claim 1, further comprising

a seventh step of performing a predetermined operation on

the measurement data obtained in the third step, and storing the results of the operation in the storage areas allocated to the specific channel number.

4. The method of inspecting a plurality of optical modules according to claim 2, further comprising

an eighth step of performing a predetermined operation on the measurement data obtained in the sixth step, and storing the results of the operation in the storage areas allocated to the specific channel number.

5. The method of inspecting a plurality of optical modules according to claim 2, further comprising

a ninth step performed between the fourth and the fifth steps, of applying a stress to the inspection board in the state that the optical modules are fitted to the inspection board.

6. The method of inspecting a plurality of optical modules according to claim 5, further comprising

a tenth step of performing a predetermined operation between the measurement data obtained in the third step and the measurement data obtained in the sixth step, and storing the result of the operation in the storage areas allocated to the specific channel number.

7. The method of inspecting a plurality of optical modules according to claim 5, wherein the stress includes temperature cycles.

8. The method of inspecting a plurality of optical modules according to any one of claims 1 to 7,

wherein an optical connector having a light emitting end face is attached to one end of each of the plurality of optical fibers, a plurality of the optical connectors being fitted to the inspection board and arranged in one direction with the light emitting end faces thereof being exposed, and

wherein the third step includes intermittently moving a stage having a measuring head suitable for the measurement item in the one direction of arrangement of the optical connectors to

face the light emitting end faces of the optical connectors, and performing measurement of the optical characteristics.

9. The method of inspecting a plurality of optical modules according to any one of claims 1 to 7,

wherein an optical connector having a light emitting end face is attached to one end of each of the plurality of optical fibers, a plurality of the optical connectors being fitted to the inspection board and arranged in one direction with the light emitting end faces thereof being exposed, and

wherein the sixth step includes simultaneously performing measurement on a plurality of inspection items in parallel, relating to any of optical and electrical characteristics of the plurality of optical modules.

10. The method of inspecting a plurality of optical modules according to claim 8, wherein in the third step includes intermittently moving a stage having measuring heads suitable for M kinds of inspection items arranged in the same direction as the array direction of the optical connectors to face the light emitting end faces of the optical connectors, and simultaneously performing measurements of the M kinds of inspection items in parallel on a plurality of the optical module corresponding to the mutually distinct M channel-numbers.

11. The method of inspecting a plurality of optical modules according to claim 9,

wherein the sixth step includes sequentially moving a stage having measuring heads suitable for M kinds of inspection items arranged in the same direction as the array direction of the optical connectors to face the light emitting end faces of the optical connectors, and simultaneously performing measurements of the M kinds of inspection items in parallel on a plurality of the optical module corresponding to the mutually distinct M channel numbers.

12. An inspection board for use in inspecting a plurality of

optical modules each having an optical fiber, for at least one of optical characteristics and electrical characteristics thereof, comprising:

a main body;

a fitting part located on a principal surface of the main body for detachably fitting the plurality of optical modules;

a redundant-length handling part located on the principal surface of the main body for preventing redundant-length portions of a plurality of optical fibers from being tangled; and

an array part located on the main body for arranging optical connectors in one direction, each connector being attached to an end of each of the optical fibers, such that light emitting end faces of the optical connectors are exposed.

13. The inspection board according to claim 12,

wherein the redundant-length handling part includes a plurality of catching members set up on the main body for individually coiling the redundant-length portions of the optical fibers around.

14. The inspection board according to claim 13,

wherein the redundant-length handling part includes a partition plate having openings through which an upper portion of each of the catching members projects.

15. The inspection board according to claim 14,

wherein said partition plate comprises a flat portion to be faced approximately in parallel to the principal surface of the main body, and a guide portion bent in substantially a semicircular shape in cross section extending continuously from an end of the flat portion adjacent to the fitting part, and

wherein the openings are formed in the flat portion.

16. The inspection board according to claim 14, wherein the redundant-length handling part includes a cover for covering the catching members and the partition plate.

17. The inspection board according to any one of claims 12 to 16, wherein

the fitting part includes a plurality of fitting blocks for individually and detachably fitting the plurality of optical modules, the fitting blocks being arranged in a plurality of rows parallel to the array part such that the fitting blocks in adjacent rows are staggered in position.

18. The inspection board according to claim 17, wherein the fitting blocks in the row farther from the array part are configured to fit the optical modules at an equal to or higher level than the fitting blocks in the rows closer to the array part.

19. The inspection board according to claim 12 or 13, wherein the fitting part includes a plurality of fitting blocks each having a first opening for fitting one of the optical modules,

wherein the main body has a plurality of second openings each corresponding to each of the plurality of fitting blocks and formed through the main body from the principal surface to a back surface of the main body, and

wherein the fitting blocks are fitted to said fitting part such that the first openings in the fitting blocks and the second opening in the main body are connected one to one.

20. The inspection board according to claim 19,

wherein each of the fitting blocks has positioning portions formed near the first opening for fitting a plurality of lead pins of one of the optical module and thereby placing the optical module in right position, and

wherein through holes are formed in a part of the positioning portions and the main body, each of the through holes extending from the fitting blocks to the main body.

21. An optical module inspection apparatus, comprising

an inspection board for detachably fitting a plurality of optical modules each having an optical fiber extending therefrom, such that end faces of the optical fibers are exposed and arranged in one direction;

a measurement part for measuring at least one of optical

characteristics of an optical signal emitted from the end face of the optical fiber of each of the optical modules and electrical characteristics of each of the optical modules;

a driving part for driving each of the optical modules to emit the optical signal from the end face of the optical fiber;

a temperature control part for controlling the temperature of each of the optical modules; and

a control part for controlling the measurement part, the driving part and the temperature control part;

wherein the control part allocates storage areas to specific channel numbers given to the optical modules in accordance with the fitting positions on the inspection board, takes in measurement data from the measurement part and/or performs operation on the measurement data, and stores the measurement data and/or results of the operation in the storage areas.

22. The optical module inspection apparatus according to claim 21,

wherein said measurement part includes a stage supporting a measuring head suitable for measurement items and capable of intermittently moving the measuring head to face the end face of the optical fiber in accordance with a signal from the control part, and

wherein the control part drives the optical module positioned correspondingly to the measuring head supported by the stage.

23. The optical module inspection apparatus according to claim 22,

wherein the stage supports a plurality of measuring heads as many as a plurality of measurement items such that the plurality of measuring heads are arranged in the same direction as the optical fibers arranged on the inspection board, and

wherein the control part drives a plurality of the optical module positioned correspondingly to the plurality of measuring heads supported by the stage.

24. The optical module inspection apparatus according to claim 22 or 23, further comprising a temperature cycling chamber for applying temperature cycles to the optical modules in the state that the optical modules are fitted to the inspection board, wherein the control part performs predetermined operation on data of at least one of optical and electrical characteristics of the optical modules obtained before and/or after application of temperature cycles.

25. The optical module inspection apparatus according to any one of claims 21 to 24, wherein the control part allocates a storage region to each of identification numbers of the inspection boards, inside which the control part further allocates a storage area to each of the channel numbers in which the measurement data and/or the results of operation are stored.

26. A method of arranging redundant-length portions of optical fibers extending from a plurality of optical modules fitted to a board, comprising:

a step of individually coiling the redundant-length portions of the optical fibers around a plurality of catching members arranged on the board with a predetermined pitch; and

a step of laying a cover over the catching members to individually keep the redundant-length portions of the optical fibers.